

teaching situations, exemplary teachers have learned how to effectively teach *all* students while at the same time creating a stimulating environment for gifted students. To assist you in achieving this goal, in this chapter we describe how to use various lessons and processes so all pupils of all literacy abilities successfully master higher level thinking and obtain a deeper, richer comprehension. As you will detect throughout this chapter, our methods are based on the promise that every student should be challenged to think critically about the work they are doing and learn how to communicate the knowledge they have gained.

COLLABORATIVE LITERACY AT WORK

By the end of this chapter you will be able to:

- Define the eight dimensions of higher-level thinking, which includes critical thinking, that you can teach, which will enable gifted students and their less able peers to think critically and creatively.
- Articulate and implement lessons and activities that encourage students to succeed in each of these eight dimensions.
- Define the limitations of present comprehension practices and problems that students face in achieving high levels of thinking.
- Use strategies of the Thinking Process Approach to Comprehension Development to increase the comprehension ability in all students.

RICH RESEARCH BASE: DIMENSIONS OF CRITICAL THINKING

Higher level thinking can be introduced to students in several ways. Regardless of the method chosen, however, research has found that every lesson can best develop the core elements of critical thinking when teachers model for their students their own thinking, and when this think-aloud is followed by specific, direct instruction in high-quality thinking processes (Block & Israel, 2004; Block & Mangieri, 1996). Table 8.1 shows eight teacher modeling samples that you can use to teach each dimension of higher level, critical thinking.

Table 8.1 offers a brief overview of the dimensions of higher level thinking and what students can expect from each dimension, as well as goals they can set for themselves. Along with expectations and goals, there are lessons that can be used with each dimension in order for students to learn more lucratively. For a few of the dimensions listed in Table 8.1, we will give one basic lesson to introduce the skills and goals and one "challenge" lesson for gifted students to lead in CLIMB project groups. For all eight of the dimensions of higher level thinking, we suggest that teachers give students a basic lesson before a CLIMB project, designed to develop the dimension of thinking assigned. Doing so will better shape students' understanding of the skill that was taught before asking them to apply it at a higher level of thinking. A description of the basic lesson for each dimension follows.

Table 8.1 Skills, Abilities, and Lessons That Develop Eight Dimensions of Higher Level Thinking or Critical Thinking

| Dimension | Skills | Specific Abilities to Be Taught | Higher Level Comprehension Goals for All Students |
|---|---|---|---|
| Dimension 1: Basic Thinking Skills | To translate, relate, and order sensory, literary, and visual input | <ol style="list-style-type: none"> 1. Mnemonic lists 2. Synonyms and examples 3. Condensing, summarizing | <ol style="list-style-type: none"> 1. Evaluate facts 2. Draw conclusions 3. Reflect on what is truly the best |
| Dimension 2: Essential Thinking Processes | To detect patterns; infer next events; translate and interpret; note inconsistencies and why they exist | <ol style="list-style-type: none"> 1. Organize and label information 2. Combine with two sets of facts 3. Judge credibility 4. Categorize and describe why | <ol style="list-style-type: none"> 1. Infer 2. Categorize 3. Judge credibility of the source |
| Dimension 3: Decision Making | To make an effective decision by selecting from two or more alternatives | <ol style="list-style-type: none"> 1. Anticipate consequences 2. Use outside resources 3. Fair judgment for all sides 4. Recognize truth and evidence vs. propaganda 5. Listen to various points of view and consider the well-being of all involved | <ol style="list-style-type: none"> 1. Decide on the best decision 2. Search for truth, facts, reason, judgments, and opinion 3. Recognize and be able to evaluate propaganda |
| Dimension 4: Problem Solving | To analyze and solve difficult situations through multiple problem-solving strategies | <ol style="list-style-type: none"> 1. Assess reasoning and quality of ideas 2. Reject poor reasoning 3. Explain assumptions 4. Use problem-solving strategies | <ol style="list-style-type: none"> 1. Recognize good/poor reasoning 2. Recognize the quality of ideas 3. Solve problems effectively |
| Dimension 5: Developing Metacognitive Thinking Abilities | To master metacognitive thinking, including self-knowledge, and self-appraisal, self-regulation | <ol style="list-style-type: none"> 1. NOT simply agreeing or disagreeing 2. NOT to accept/reject on the basis of egocentric attachment 3. NOT assume they are wrong if their reasons deviate from other students | <ol style="list-style-type: none"> 1. Use social interaction to assist self-regulation 2. Understand personal beliefs and why 3. View thoughts from various points of view |

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| Dimension | Skills | Specific Abilities to Be Taught | Higher Level Comprehension Goals for All Students |
|---|---|---|---|
| Dimension 6: Creative Thinking | To think more creatively by engaging emotions and attention in order to produce original ideas and products | <ol style="list-style-type: none"> 1. Explore logic 2. Discover multiple perspectives 3. Find a personal voice 4. Create original ideas and products | <ol style="list-style-type: none"> 1. Enact stories based on experiences, literature, etc. 2. Participate in improvisational activities 3. Create individual and unique writing such as poetry |
| Dimension 7: Thinking More Effectively in Groups | To think effectively in groups and depend on the nature of thinking as it evolves in group settings | <ol style="list-style-type: none"> 1. Mentoring 2. Networking 3. Listening carefully to others' ideas 4. Asking questions 5. Set challenging goals with others | <ol style="list-style-type: none"> 1. Make statements of appreciation and give compliments 2. Set group goals and collaborate to achieve them 3. Ask meaningful questions |
| Dimension 8: Ability to Think Effectively When Alone | To pursue and use the power of students' own ideas | <ol style="list-style-type: none"> 1. Set goals and direction 2. Set priorities 3. Present ideas clearly | <ol style="list-style-type: none"> 1. Improve marginal performance 2. Self-stimulate intellectual curiosities 3. Meet goals and direction |

SOURCE: Adapted from Block (2001).

Basic Lessons for Each Dimension of Critical Thinking

For Dimension 1, the goals are for students to gain mastery of basic critical-thinking skills, such as evaluating facts, drawing conclusions, and reflecting on what is the "true" best. In order for students to reach these goals, the first lesson they will do is to create a Venn diagram, which will start out simply and then become more complex. Teachers help students learn how to create a Venn diagram, explaining that they are useful graphic tools to show differences and similarities. Next, teachers model how to use one by putting two objects on a table in front of the classroom. Teachers will then draw one on the board or overhead and perform a think-aloud with students to report the critical, higher level thoughts they use to discover differences and similarities. Students practice these thought patterns until they can look carefully at each part of objects, ideas, or events to almost automatically deduce similarities and differences.

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